

REMARKS

Claims 1-4, 7-12, and 15-31 are pending in the current application. Claims 1 and 2 are currently amended. Claims 5-6 and 13-16 are canceled. Claims 22-31 are withdrawn.

Claim Rejections – 35 U.S.C. § 102

Claims 1-4, 7-10, and 19-21 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Misewich et al. (US 2002/0118369, hereinafter “Misewich”) in view of Bhushan (US 6,404,207, hereinafter “Bhushan”). Applicants respectfully traverse this rejection.

Claim 1 has been amended and now recites: “a surface of the film is scanned by contacting the part having a sharp tip with the film to apply a mechanical force on the film in a scanning direction so that the crystals and/or molecules are oriented in the scanning direction, and wherein the scanning direction is a film in-plane direction and is not perpendicular to the film.” These amendments are supported by at least line 18, page 9 to line 9, page 10 of Applicants’ specification. Neither Misewich nor Bhushan, alone or in combination, teach these features.

Misewich teaches a method of depositing a ferroelectric thin film on substrate and using an atomic force microscope to define patterns on the thin film. (Misewich: Abstract; FIG. 1). With respect to the mechanical force recited in claim 1, the Examiner references paragraph [0018] of Misewich which discusses applying a voltage to a tip 13 of an atomic force microscope. The Examiner again appears to argue that applying a voltage to the tip 13 is equivalent to applying a mechanical force as claim 1 requires. However, even if, *for the sake of argument*, the voltage applied to the tip 13 can be considered a mechanical force as the Examiner suggests, nothing in Misewich teaches **“contacting the part having a sharp tip with the film to apply a**

mechanical force on the film in a scanning direction so that the crystals and/or molecules are oriented in the scanning direction” (emphasis added) as amended claim 1 recites. Further, Misewich teaches controlling a polarization direction of portions of the ferroelectric film 12 to be up or down (Misewich: FIGS. 1, 3a, 3b and 3c). Accordingly, the type of structure control discussed in Misewich is substantially different from that of the subject matter of claim 1. Specifically, Misewich does not teach orienting crystals/molecules in a scanning direction where a scanning direction is “a film in-plane direction and is not perpendicular to the film” as claim 1 also recites.

With respect to Bhushan, Bhushan merely discloses an arrangement in which an AFM probe is scanned in a contact mode. Accordingly, the teachings of Bhushan are also substantially different from the subject matter of claim 1. Specifically, the combination of Misewich and Bhushan still fails to teach “a surface of the film is scanned by contacting the part having a sharp tip with the film to apply a mechanical force on the film in a scanning direction so that the crystals and/or molecules are oriented in the scanning direction, and wherein the scanning direction is a film in-plane direction and is not perpendicular to the film” as claim 1 recites. Accordingly, neither Misewich, nor Bhushan, alone or in combination, teach each of the limitations of claim 1. Consequently, the Examiner has not established a *prima facie* case of obviousness with respect to amended claim 1, or any claims depending from claim 1, as is required to support a rejection under §103.

Further, claim 2 has been amended and contains limitations similar to those discussed above with respect to claim 1. Accordingly, at least by virtue of the similarity between claim 2 and claim 1, Applicants respectfully submit the Examiner has not established a *prima facie* case of obviousness with respect to amended claim

2, or any claims depending from claim 2, as is required to support a rejection under §103.

Therefore, Applicants respectfully request the rejection of claims 1-4, 7-10, and 19-21 under 35 U.S.C. §102 be withdrawn.

Claim Rejections – 35 U.S.C. § 103

Claims 11-12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Misewich in view of Bhushan and further in view of Dietzel et al. (US 6,665,258, hereinafter “Dietzel”). Applicants respectfully traverse this rejection.

The deficiencies of Misewich are discussed above and are relevant here as well because claims 11-12 depend from claims 1 and 2. For at least the reasons stated above, Misewich fails to teach each of the limitations in either of claims 1 and 2. Dietzel fails to remedy these deficiencies. Accordingly, at least by virtue of their dependence from claims 1 and 2, neither Misewich, nor Dietzel, alone or in combination, teach each of the limitations of either of claims 11-12. Consequently, the Examiner cannot establish a *prima facie* case of obviousness with respect to either of claims 11 and 12 as is required to support a rejection under §103.

Therefore, Applicants respectfully request the rejection of claims 11-12 under 35 U.S.C. §112 be withdrawn.

CONCLUSION


Accordingly, in view of the above amendments and remarks, reconsideration of the objections and rejections and allowance of each of claims 1-4, 7-12, and 15-21 in connection with the present application is earnestly solicited.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Donald J. Daley at the telephone number of the undersigned below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. §1.17; particularly, extension of time fees.

Respectfully submitted,

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